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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,473	09/27/2005	Mitsuhiro Suzuki	261880US6PCT	4384
22850	7590	12/11/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
JOSEPH, JAISON				
ART UNIT		PAPER NUMBER		
2611				
NOTIFICATION DATE		DELIVERY MODE		
12/11/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/528,473

**Applicant(s)**

SUZUKI, MITSUHIRO

**Examiner**

JAISON JOSEPH

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9-12, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 6-8 and 14-16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 9, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent 6,044,341).

Regarding claim 1, Takahashi et al teaches a transmitting device that processes radio transmitted signals (see figure 1), comprising: a frequency conversion means that converts an original time sequence signal into a frequency signal to attain a spectrum characteristic (see figure 4, component 33), a spectrum characteristic processing means that changes an amplitude of a spectrum signal while retaining phase information of the spectrum (see figure 4, component 34), and a means that reconverts a spectrum having the spectrum characteristic processing applied into a time sequence signal (see figure 4, component 40). Takahashi does not expressly teach convert s a known multi-valued pattern into frequency domain. However it would be obvious to an ordinary skilled in the art at the time the invention was made to convert a known multi-valued pattern since the known multi-valued pattern is just another signal. The motivation or suggestion to do so is to suppress the noise.

Regarding claim 9, the claimed method including the features corresponds to subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Regarding claim 17, the claimed storage medium including the features corresponds to subject matter mentioned above in the rejection of claim 1 is applicable hereto.

Claims 2 – 4, 10 – 12 and 18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Takahashi (US Patent 6,044,341) in views of Johns IV et al (US Patent 6,657,950).

Regarding claim 2, which inherits the limitations of claim 1, Takahashi does not expressly teach transmits a signal reconverted into the time sequence signal together with a data body as a pre-amble signal for attaining synchronization on a receiving side. however in analogous art, Johns IV et al teach a means that transmits a signal reconverted into the time sequence signal together with a data body as a pre-amble signal for attaining synchronization on a receiving side (see figure 3, component 304). Therefore it would have been obvious to an ordinary skilled in the art at the time the invention was made to incorporate the teaching of Takahashi in Johns et al. the motivation or suggestion to do so is to suppress the noise in the preamble.

Regarding claim 3, which inherits the limitations of claim 2, Johns IV et al further teach further comprising a modulation processing means that modulates a transmitted data body to attain a modulated signal for transmission, wherein the modulated signal is transmitted together with the pre-amble signal (see figure 3).

Regarding claim 4, which inherits the limitations of claim 3, Johns IV et al further teach the modulation processing means performs an OFDM modulation that applies amplitude and phase modulation to carriers each, applies inverse FFT to the plural

carriers, and thereby converts the carriers into signals on the time base, while retaining the orthogonality of the carriers each on the frequency axis (see figure 3).

Regarding claim 10 which inherits the limitations of claim 9, the claimed method including the features corresponds to subject matter mentioned above in the rejection of claim 2 is applicable hereto.

Regarding claim 11 which inherits the limitations of claim 10, the claimed method including the features corresponds to subject matter mentioned above in the rejection of claim 3 is applicable hereto.

Regarding claim 12 which inherits the limitations of claim 11, the claimed method including the features corresponds to subject matter mentioned above in the rejection of claim 4 is applicable hereto.

Regarding claim 18, the claimed transmitter including the features corresponds to subject matter mentioned above in the rejection of claim 3 is applicable hereto.

#### ***Allowable Subject Matter***

Claims 6 – 8 and 14 – 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAISON JOSEPH whose telephone number is (571)272-6041. The examiner can normally be reached on M-F 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. J./  
Examiner, Art Unit 2611

/Chieh M Fan/  
Supervisory Patent Examiner, Art Unit 2611